

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number
WO 2005/008586 A2

(51) International Patent Classification⁷: G06T 5/00

(21) International Application Number:
PCT/IB2004/002325

(22) International Filing Date: 16 July 2004 (16.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/488,632 18 July 2003 (18.07.2003) US

(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(71) Applicant (for AE only): U.S. PHILIPS CORPORATION [US/US]; 1251 Avenue of the Americas, New York, NY 10510-8001 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): TIMMER, Jan [NL/NL]; P.O. Box 220, NL-5600 AE Eindhoven (NL).

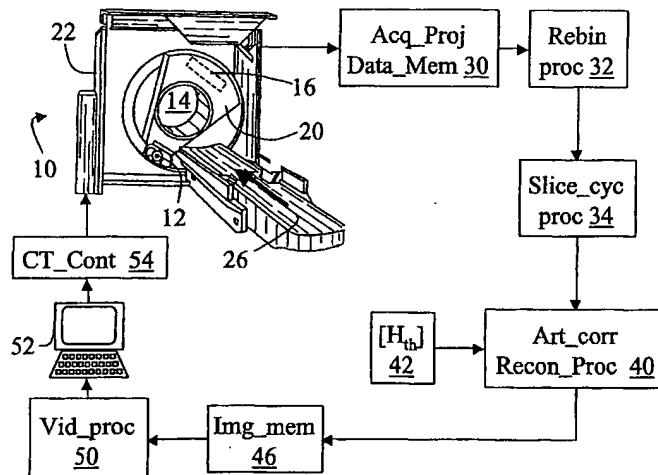
(74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS N.V.; c/o LUNDIN, Thomas, M., 595 Miner Road, Cleveland, OH 44143 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METAL ARTIFACT CORRECTION IN COMPUTED TOMOGRAPHY



(57) Abstract: An artifact correcting image reconstruction apparatus includes a reconstruction processor (70) that reconstructs acquired projection data (60) into an uncorrected reconstructed image (74). A classifying processor (78) classifies pixels of the uncorrected reconstructed image (74) at least into high, medium, and low density pixel classes. A pixel replacement processor (88) replaces pixels of the uncorrected reconstructed image (74) that are of the high density and low density classes with pixel values of the low density pixel class to generate a synthetic image (90). A forward projecting processor (94) forward projects the synthetic image (90) to generate synthetic projection data (96). A projection replacement processor (100, 110) replaces acquired projection data (60) contributing to the pixels of the high density class with corresponding synthetic projection data (96) to generate corrected projection data (112). The reconstruction processor (70) reconstructs the corrected projection data (112) into a corrected reconstructed image (120).

WO 2005/008586 A2

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.